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State of Michigan Office Building
350 Ottawa Avenue, N. W.
Grand Rapids, Michigan 49503

September 8, 1978

Andy Sibley, Certified Operator
Brown Corporation of Ionia
314 South Steele Street
Ionia, Michigan 48846

Dear Mr. Sibley:

Attached is a Report of An Industrial Survey conducted at Brown Corporation on May 30-31, 1978. Please excuse the delay in transmitting this report to you.

The results of the report are typical of an untreated waste stream from the company's type of process. You are already aware of the need for a discharge permit at your plant. The Water Quality Division is currently processing the company's application dated January 3, 1978.

You should know that any permit issued by the Water Resources Commission will require monitoring and reporting of discharge characteristics on a monthly basis. Other monitoring provisions, such as monitoring wells, may also be required. Upgraded treatment of the waste stream prior to discharge may also be required. The company is encouraged to compare the cost of the above factors to the cost of discharging all or a portion of the waste stream to the City of Ionia Wastewater Treatment System. The cost of monitoring a cooling water discharge at a reduced frequency, plus the user fee cost for discharge of the bonderizer and paint booth overflows to the sanitary sewer, may be less than the cost of monitoring under the present discharge scheme. You should know that there is no guarantee that the Water Resources Commission will issue a permit for the company's discharge to ground or surface waters under today's strict environmental laws.

Your prompt consideration of these matters is imperative. If you should have any questions, please contact the Grand Rapids District Office, phone 456-6231.

Very truly yours,

WATER QUALITY DIVISION

James H. Turek,
Water Quality Specialist

JMT/mc
cc: J. Bonunsky

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION BUREAU
POINT SOURCE STUDIES SECTION

Report of an
Industrial Wastewater Survey
Conducted at
BROWN CORPORATION
All Outfalls No. 340081
Ionia County
Ionia, Michigan
May 30-31, 1978

Survey Summary

Wastewater monitoring was performed during one twenty-four hour survey period starting Tuesday, May 30, 1978. The composite sample collected during the survey had 73 mg/l suspended solids and 4.0 mg/l total phosphorus. Two grab samples had oil and grease concentrations of 20 mg/l and 39 mg/l (Tables 1 and 2).

The company does not have a discharge permit.

The results of the survey were compared with the results of the last survey conducted in June 1974. The COD, suspended solids and total phosphorus concentrations found during this survey were higher than found during June 1974.

Purpose of Survey

The purpose of the survey was to determine the quality and quantity of wastewater being discharged by Brown Corporation to groundwater adjacent to the Grand River.

Plant Process

The Brown Corporation of Ionia (Figure 1) produces stamped parts for the automotive industry. The plant operates 16 hours a day, 5 days a week and employs 65 people. The production during the survey was about normal.

The automotive parts are stamped from sheet or coil steel. The stamped parts are washed, welded, painted, assembled and shipped.

Water, Wastewater & Treatment

The water used at the plant is from the City of Ionia. The sanitary sewage is discharged to the city's sanitary sewer system.

The process and cooling wastewater consisting of overflow from the paint booths, overflow from the bonderizer line, air compressor cooling water and cooling water for the arc welder is discharged to swampy area behind the plant. The wastewater is not treated before discharge. During the survey the swampy area was dry 100 feet from the plant discharge pipe.

Survey Procedure

The flow and samples were obtained as follows:

Outfall 340081 (001) - Grab Composite & Individual Grab

A grab composite consists of a series of individual grabs composited into one sample.

Samples were analyzed by the Environmental Protection Bureau Laboratories located in Lansing.

Samples were preserved according to Table 4. The results of the physical and chemical analyses are presented in Tables 1 and 2.

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Table 1 Analyses of composite samples.

Outfall		340081
Survey Period	From	5-30-78 - 1640
	To	5-31-78 - 1640

mg/l

COD	170
Suspended solids	73
Dissolved solids	510
Nitrite & nitrate nitrogen-N	0.28
Ammonia nitrogen-N	0.22
Organic nitrogen-N	0.8
Total phosphorus-P	4.0
Total chromium (Cr)	< 0.01
Total copper (Cu)	0.04
Total nickel (Ni)	< 0.05
Total zinc (Zn)	0.13
Total iron (Fe)	0.56

ug/l

PCB 1242	< 1
PCB 1254	< 1
PCB 1260	< 1
DEHP	< 10
DBP	< 10

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Table 2 Analyses of grab samples.

<u>Date</u>	<u>Time</u>	<u>Temp.¹</u> °C	<u>pH¹</u> S.U.	<u>Oil & Grease</u> mg/l	<u>COD</u> mg/l	<u>Susp. solids</u> mg/l	<u>Diss. solids</u> mg/l	<u>Nitrite & nitrate nitrogen</u> mg/l	<u>Ammonia nitrogen</u> mg/l	<u>Organic nitrogen</u> mg/l	<u>Total phosphorus</u> mg/l
<u>340081 (001)</u>											
5-31-78	0805	19	8.2	20	39	10	420	0.37	0.18	1.0	1.9
5-31-78	1530	18	9.1	39	120	70	490	0.12	0.36	1.6	4.7
5-31-78	1640	19	9.7	--	310	180	700	0.15	0.33	1.7	10
		<u>Total chromium</u> mg/l	<u>Total copper</u> mg/l	<u>Total nickel</u> mg/l	<u>Total zinc</u> mg/l	<u>Total iron</u> mg/l					
5-31-78	0805	< 0.01	0.02	< 0.05	0.08	0.27					
5-31-78	1530	< 0.01	0.03	< 0.05	0.11	0.49					
5-31-78	1640	0.03	0.07	< 0.05	0.59	3.1					

1 - Values determined in the field at time of sampling.

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Table 3 Comparison of the previous survey results with the results obtained in this survey.

Outfall		340081 (001)		
Survey Date	From	6-5-74	6-6-74	5-30-78
	To	6-6-74	6-7-74	5-31-78
Flow Rate (M ³ /day)		440 <i>0.12 MGD</i>	570 <i>0.15 MGD</i>	--
		<u>mg/l</u>	<u>mg/l</u>	<u>mg/l</u>
COD		33	37	170
Suspended solids		4	1	73
Nitrite & nitrate nitrogen-N		2.7	2.4	0.28
Ammonia nitrogen-N		0.22	0.30	0.22
Total phosphorus-P		1.4	1.4	4.0

Table 4 Sample Preservation

<u>Parameter</u>	<u>Preservative</u>
COD	10 drops conc. H ₂ SO ₄ /250 ml (to pH <2).
Total Metals	2 ml 1:1 HNO ₃ /250 ml (to pH <2).
Oil & Grease	10 drops conc. H ₂ SO ₄ /250 ml (to pH <2).
All samples cooled to 4°C upon collection and chain of custody maintained.	

Survey by: Richard Christensen, Sanitary Engineer
William Long, Water Quality Investigator
Joseph Hey, Water Quality Investigator

Contact with Management: Andy Sibley, Certified Operator

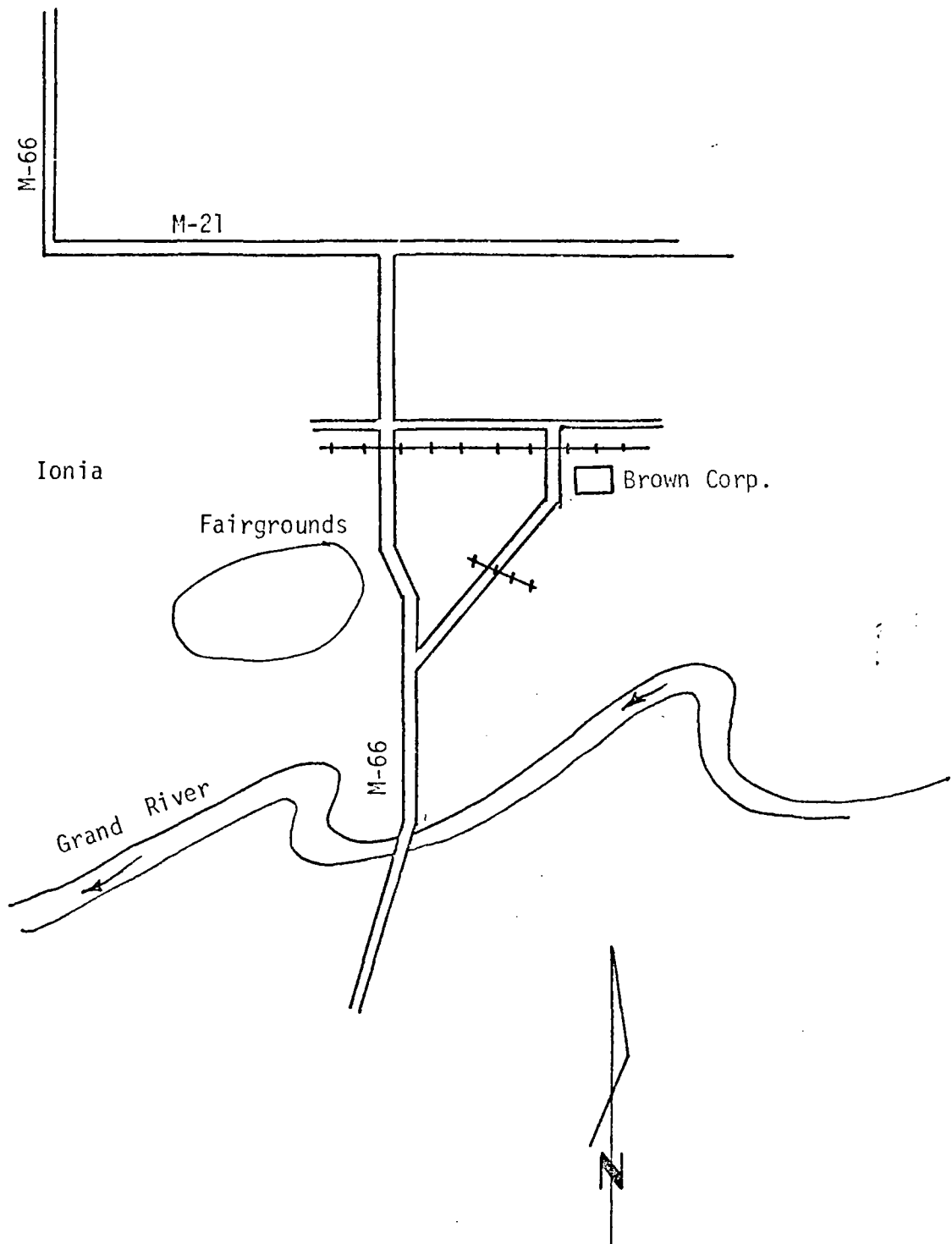
Hydrocarbon Analyses by: Environmental Protection Bureau Laboratory

Physical & Chemical Analyses by: Environmental Protection Bureau Laboratory

Report by: Richard Christensen
William Long
Point Source Studies Section
Environmental Services Division
Environmental Protection Bureau
Michigan Department of Natural Resources

Distribution "A"
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Figure 1 Brown Corporation - Ionia



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